PROMISE® TECHNOLOGY, INC.

# VTRAK
# M-Class

## M500f, M500i, M500p, M300f, M300i, M300p, M200f, M200i, M200p

# QUICK START GUIDE

Version 1.5 / SR3

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# VTrak M-Class Task List

Step 1: Unpack the VTrak (below).
Step 2: Mount VTrak in a Rack (page 5)
Step 3: Install Disk Drives (page 5)
Step 4: Network and Data Cable Connections (page 7)
Step 5: Set Up Serial Cable Connections (page 12)
Step 6: Connect the Power (page 12)
Step 7: Set IP Address with CLI or CLU (page 14)
Step 8: Install iSCSI Initiator on the Host PC (page 24) (M500i, M300i, M200i)
Step 9: VTrak Setup with Embedded WebPAM (page 25)

## *Step 1: Unpack the VTrak*

The VTrak box contains the following items:

- VTrak Unit
- Quick Start Guide
- Null Modem Cable
- Left and right mounting rails
- 1.0m External VHDCI SCSI cables (2 for M500p/M300p, 1 for M200p)
- Screws for disk drives (36 for M200f/i/p; 52 for M300f/i/p; 64 for M500f/i/p; including 4 spares)
- 1.5m (4.9 ft) Power cords (2)
- CD with SNMP files, *Product Manual* and *Quick Start Guide*

**Warning**

The electronic components within the VTrak disk array are sensitive to damage from Electro-Static Discharge (ESD). Observe appropriate precautions at all times when handling the VTrak or its subassemblies.

**Important**

Use the following categories of network cables with VTrak:

- Cat 6, preferred
- Cat 5E, minimum

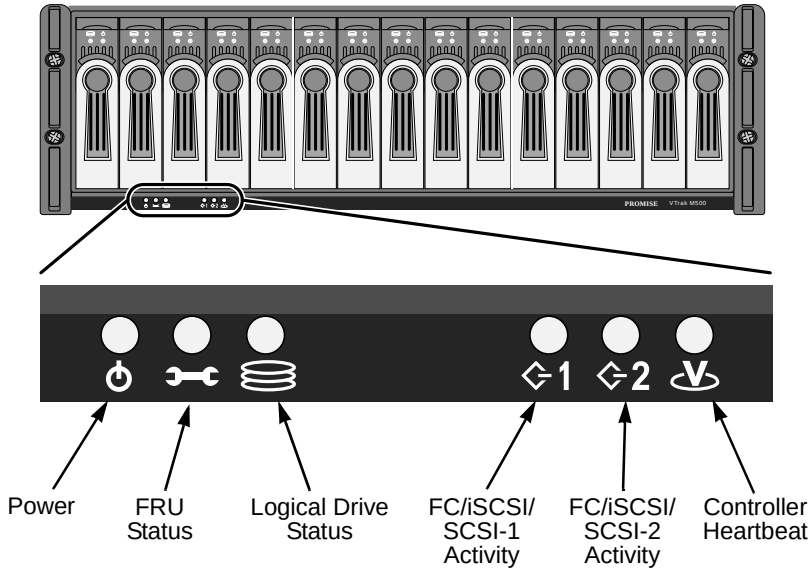



***Figure 1. VTrak M500f/i/p Front View***

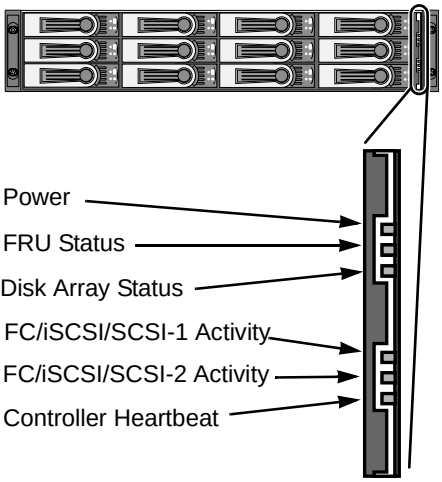



***Figure 2. VTrak M300f/i/p and M200f/i/p Front View***

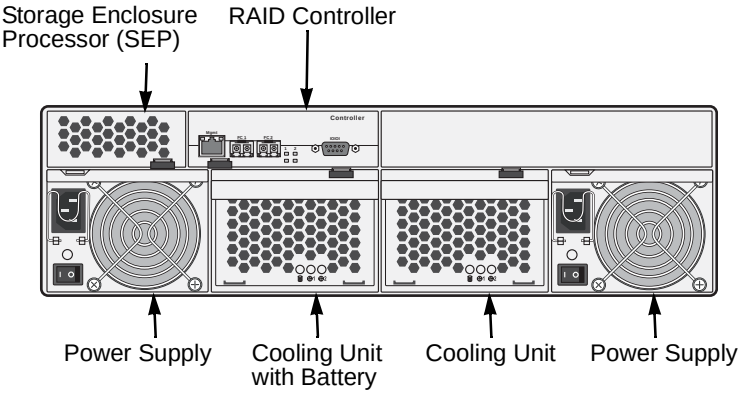



***Figure 3. VTrak M500f Rear View (M500i and M500p have different controllers)***

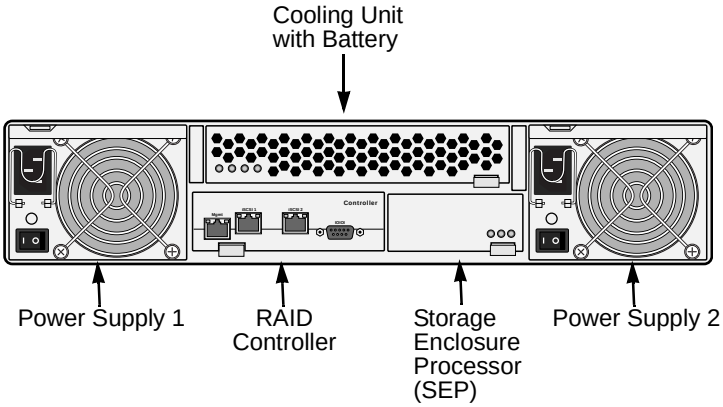



***Figure 4. VTrak M300i/M200i Rear View (M300f/M200f and M300p/M200p have different controllers)***

# Step 2: Mount VTrak in a Rack

The VTrak M-Class subsytems install directly to the rack with or without using the supplied mounting rails. Refer to Chapter 2 of the *VTrak Product Manual* on the CD for instructions on installing the rails and mounting your VTrak.

# Step 3: Install Disk Drives

You can populate the VTrak with 1.5 GB or 3.0 GB SATA drives. Refer to Chapter 7 of the *VTrak Product Manual* on the CD for the number of drives needed for each RAID configuration.

Install all of the drive carriers into the VTrak enclosure to ensure proper airflow, even if you do not populate all the carriers with disk drives.

If you use different size disk drives in the same logical drive, the total size of the logical drive will equal the size of the smallest disk drive times the number of drives.

Refer to Chapter 2 of the *VTrak Product Manual* on the CD for diagrams showing how the drive slots are numbered.

**Caution**

Use only the counter-sink screws supplied with the VTrak. Use of other types of screws can damage the adjacent drives.

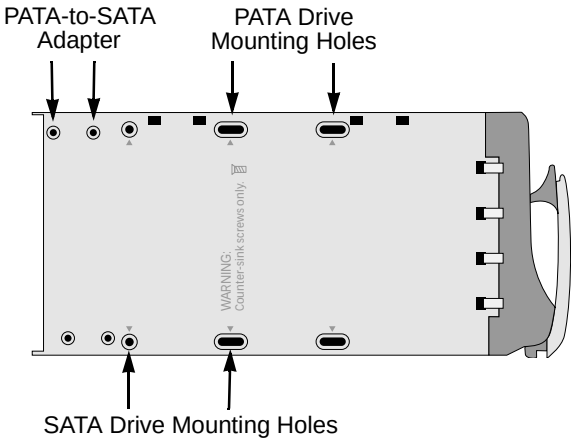



***Figure 5. M500f/i drive carrier mounting holes***

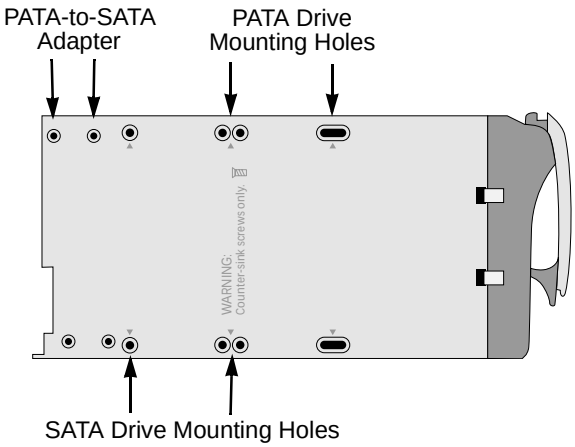



***Figure 6. M300f/i and M200f/i drive carrier mounting holes***

***Figure 7. SATA Disk Drives mount at the front of the carrier***

A VTrak M500f/i/p carrier is shown above. The VTrak M300f/i/p and M200f/i/p carrier is similar in appearance but the two carrier designs are NOT interchangeable.

# *Step 4: Network and Data Cable Connections*

The VTrak M500f, M300f and M200f share the same RAID controller design and use Fibre Channel (FC) connections for the data ports.

The VTrak M500i, M300i and M200i share the same RAID controller design and use iSCSI connections for the data ports.

You can configure your VTrak FC and iSCSI data connections for a:

- Storage Area Network (SAN)
- Direct Attached Storage (DAS)

The VTrak M500p, M300p and M200p share the same RAID controller design and use SCSI connections for the data ports. SCSI is limited to a DAS solution.

All VTrak models in this series have a single Ethernet (RJ-45) Management Port connector that enables you to monitor the VTrak over your network using the WebPAM Software. VTrak supports Ethernet and Telnet protocols.

## Fibre Channel Storage Area Network.

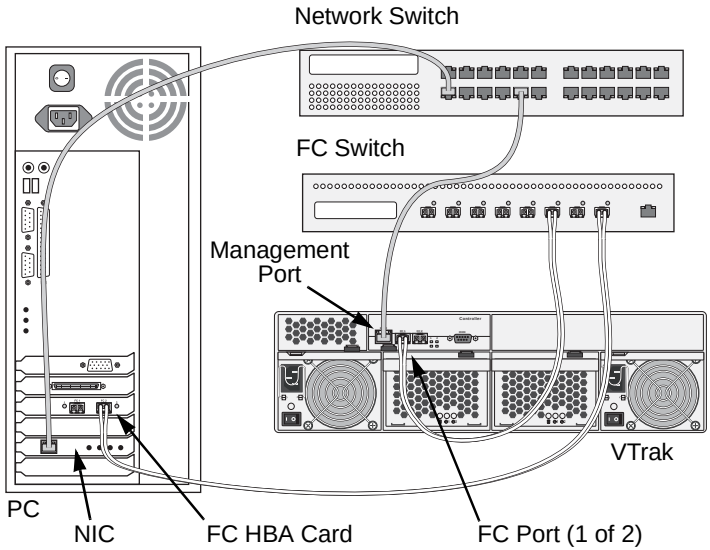



***Figure 8. VTrak M500f SAN connections (M300f and M200f are similar)***

This arrangement requires:

- A Fibre Channel switch
- A Fibre Channel HBA card in the Host PC

- A network switch
- A network interface card (NIC) in the PC

Connect the VTrak Fibre Channel data ports to your Fibre Channel switch to establish the data path.

Connect the PC's standard NIC and the VTrak Management Port to your network switch to establish the management path.

## Fibre Channel Direct Attached Storage

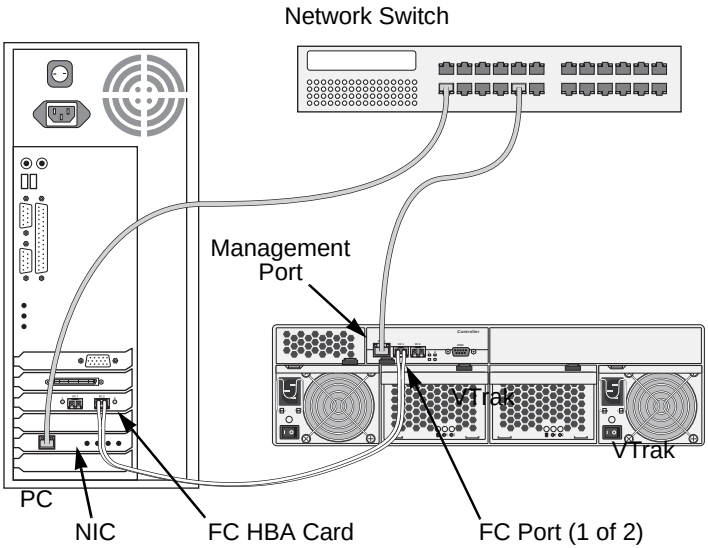



***Figure 9. VTrak M500f DAS connections (M300f and M200f are similar)***

This arrangement requires:

- A Fibre Channel HBA card in the Host PC
- A network switch
- A network interface card (NIC) in the PC

Connect the VTrak Fibre Channel data ports to your Fibre Channel HBA card in your PC to establish the data path.

Connect the PC's standard NIC and the VTrak Management Port to your network switch to establish the management path.

## iSCSI Storage Area Network

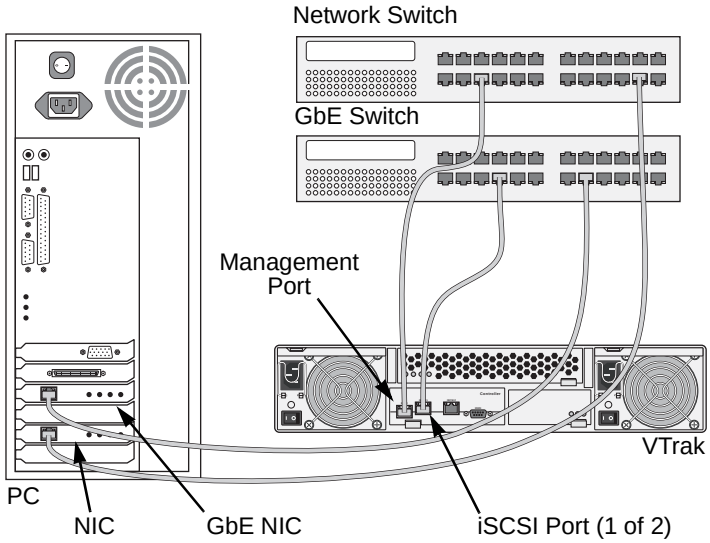



***Figure 10. VTrak M300i and M200i SAN connections (M500i is similar)***

This arrangement requires:

- A Gigabit Ethernet network interface card (GbE NIC) with iSCSI support (in hardware or software)
- A GbE Switch with iSCSI support
- A network switch
- A network interface card (NIC) in the PC

Connect the 1 GbE (iSCSI) NIC and VTrak Data Ports to your GbE switch to establish an isolated data path.

Connect the PC's standard network card and VTrak Management Port to your network switch to establish the management path.

As an alternative, you can use the same GbE (iSCSI) NIC for your PC for management and data connections. However, combining management and data paths this way will reduce performance.

## iSCSI Direct Attached Storage

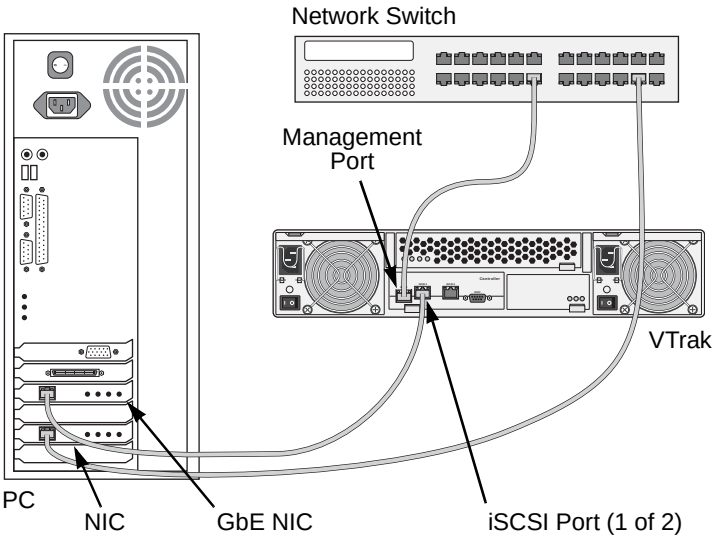



***Figure 11. VTrak M300i and M200i DAS connections (M500i is similar)***

This arrangement requires:

- A Gigabit Ethernet network interface card (GbE NIC) with iSCSI support (in hardware or software)
- A network switch
- A network interface card (NIC) in the PC

Connect the GbE (iSCSI) NIC in your PC to one of the VTrak Data Ports to establish an isolated data path.

Connect the PC's standard NIC and VTrak's Management Port to your network switch to establish the management path.

## SCSI Direct Attached Storage

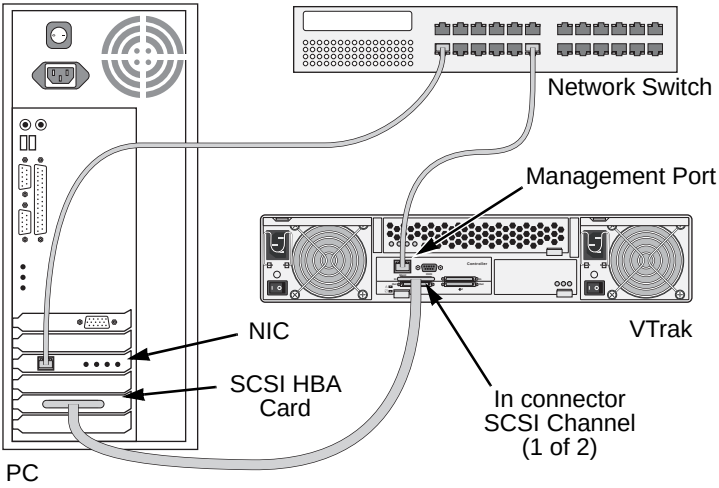



***Figure 12. VTrak M300p and M200p DAS connections (M500p is similar)***

This arrangement requires:

- A network switch
- A network interface card (NIC) in the PC
- A SCSI HBA card in the PC
- A SCSI cable that fits your HBA card and has a VHDCI connector to fit the VTrak SCSI channel

VTrak's SCSI connectors are bi-directional. However, the internal termination feature works only on the "Out" connector. Internal termination is set to "Automatic" by default.

Connect the PC's standard NIC and VTrak's Management Port to your network switch to establish the management path.

Connect a SCSI cable to the PC's SCSI HBA card and one of the VTrak's SCSI channels. To use the internal termination feature, attach the SCSI cable to the "In" connector. An external terminator is not required for this arrangement.

If you plan to connect multiple VTraks on a SCSI chain, connect the other side of the same SCSI channel on the first VTrak to a SCSI channel on the second VTrak.

See Chapters 4 or 5 of the *VTrak Product Manual* on the CD for more information.

# Step 5: Set Up Serial Cable Connections

The RS-232 Serial connection enables the Command Line Utility (CLU) on your PC to monitor and control VTrak.

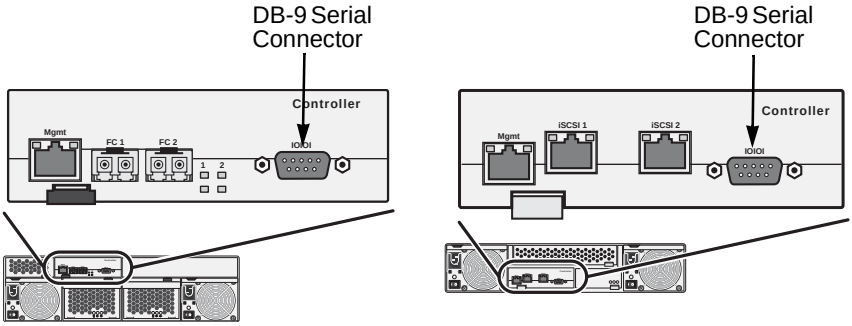



***Figure 13. Serial connectors for VTrak M500f (left) and M300i (right)***

# Step 6: Connect the Power

Plug the power cords and switch on both power supplies on. When the power is switched on, the LEDs on the front of the VTrak will light up.

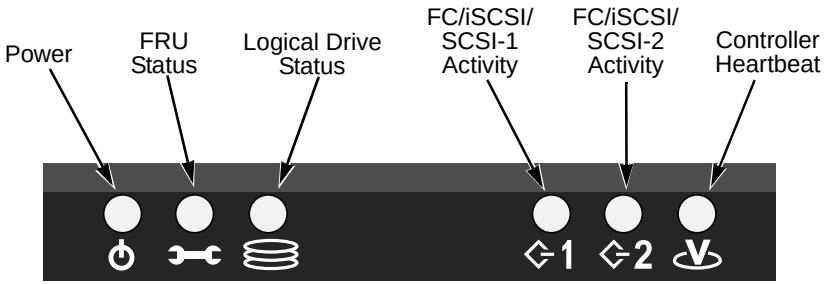



***Figure 14. VTrak M500f/i front panel LED display***

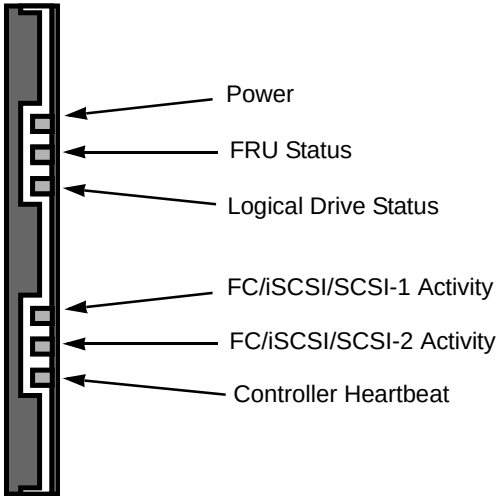



***Figure 15. VTrak M300f/i and M200f/i front panel LED display***

When boot-up is finished and the VTrak is functioning normally:

- Controller LED blinks green once per second for five seconds, goes dark for ten seconds, then blinks green once per second for five seconds again.
- Power, FRU and Logical Drive LEDs display green continuously.
- Fibre Channel/iSCSI/SCSI LEDs flash green if there is activity on that channel.

There are two LEDs on each Drive Carrier. They report the presence of power and a disk drive, and the current condition of the drive.

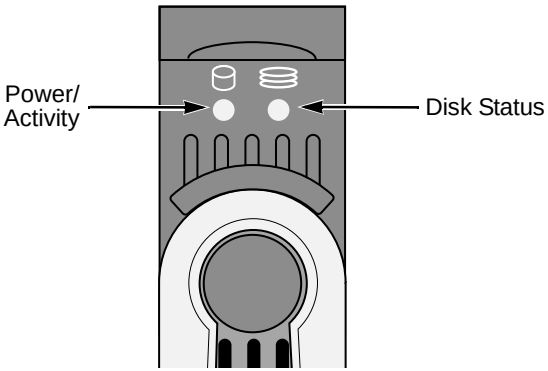



***Figure 16. VTrak M500f/i/p disk carrier LEDs***

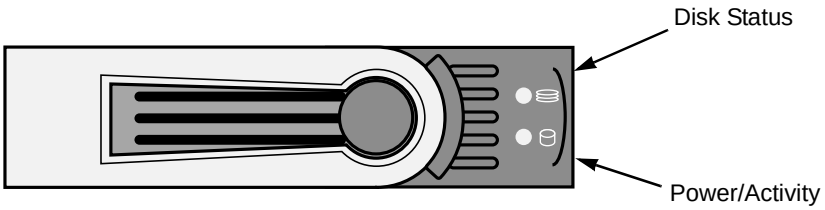



***Figure 17. VTrak M300f/i/p and M200f/i/p disk carrier LEDs***

After a few moments the Power/Activity should display Green.

If there is no disk drive in the carrier, the Disk Status LED and the Power/Activity LED will remain dark.

# *Step 7: Set IP Address with CLI or CLU*

VTrak has a Command Line Interface (CLI) to manage all of its functions, including customization. A subset of the CLI is the Command Line Utility (CLU), a user-level interface that manages your VTrak via your PC's terminal emulation program, such as Microsoft HyperTerminal.

You will use the CLU to assign an IP address to the VTrak for WebPAM.

1. Change your terminal emulation program settings to match the following:
   - Bits per second: 115200
   - Data bits: 8
   - Parity: None
   - Stop bits: 1
   - Flow control: none
2. Start your PC's terminal VT100 or ANSI emulation program.
3. Press Enter once to launch the CLI.
4. At the Login prompt, type **administrator** and press Enter.
5. At the Password prompt, type **password** and press Enter.

   At this point, you are in the CLI. You can continue using the CLI to make network settings or you can switch to the CLU.
   - CLI: Fibre Channel and SCSI Models (M500f/p, M300f/p, M200f/p) (page 15)
   - CLI: iSCSI Models (M500i, M300i, M200i) (page 15)
   - CLU: Fibre Channel and SCSI Models (M500f/p, M300f/p, M200f/p) (page 17)
   - CLU: iSCSI Models (M500i, M300i, M200i) (page 19)

## CLI: Fibre Channel and SCSI Models (M500f/p, M300f/p, M200f/p)

1. Type the following string to set the Management Port IP address and other settings, then press Enter.

   administrator@cli> **net -a mod -t mgmt -s "primaryip=192.168.10.87, primaryipmask=255.255.255.0, gateway=192.168.10.3"**

   In the above example, the IP addresses and subnet mask are included as examples only. Your values will be different.

   If you prefer to let your DHCP server assign the IP address, type the following string, then press Enter.

   administrator@cli> **net -a mod -t mgmt -s "dhcp=enable"**

2. To verify the settings, type **net** and press Enter.

   administrator@cli> **net**

   ```
   ==========================================
   CId Port Type   IP             Mask          Gateway       Link
   ==========================================
   1   1    Mgmt   192.168.10.87  255.255.255.0 192.168.10.3  Up
   ```

This completes the Management port setup. Go to “Step 9: VTrak Setup with Embedded WebPAM” on page 25.

To see the full set of CLI commands, at the admin@cli> prompt, type **help** and press Enter.

## CLI: iSCSI Models (M500i, M300i, M200i)

1. Type the following string to set the Management Port IP address and other settings, then press Enter.

   administrator@cli> **net -a mod -t mgmt -s "primaryip=192.168.10.87, primaryipmask=255.255.255.0, gateway=192.168.10.3"**

   In the above example, the IP addresses and subnet mask are included as examples only. Your values will be different.

   If you prefer to let your DHCP server assign the IP address, type the following string, then press Enter.

   administrator@cli> **net -a mod -t mgmt -s "dhcp=enable"**

2. To verify the settings, type **net** and press Enter.

   administrator@cli> **net**

```
==========================================
CId Port Type   IP             Mask          Gateway       Link
==========================================
1   1    Mgmt   192.168.10.87  255.255.255.0 192.168.10.3  Up
1   1    iSCSI  0.0.0.0        0.0.0.0       0.0.0.0       Down
1   2    iSCSI  0.0.0.0        0.0.0.0       0.0.0.0       Down
```

3. Type the following string to set the iSCSI Port IP address and other settings, then press Enter.

   administrator@cli> **net -a mod -t iSCSI -p 1 -s "primaryip=192.168.10.88, primaryipmask=255.255.255.0, gateway=192.168.10.3"**

   If you prefer to let your DHCP server assign the IP address, type the following string, then press Enter.

   administrator@cli> **net -a mod -t iSCSI -p 1 -s "dhcp=enable"**

4. To verify the settings, type **net** and press Enter.

   administrator@cli> **net**

```
==========================================
CId Port Type   IP             Mask          Gateway       Link
==========================================
1   1    Mgmt   192.168.10.87  255.255.255.0 192.168.10.3  Up
1   1    iSCSI  192.168.10.88  255.255.255.0 192.168.10.3  Up
1   2    iSCSI  0.0.0.0        0.0.0.0       0.0.0.0       Down
```

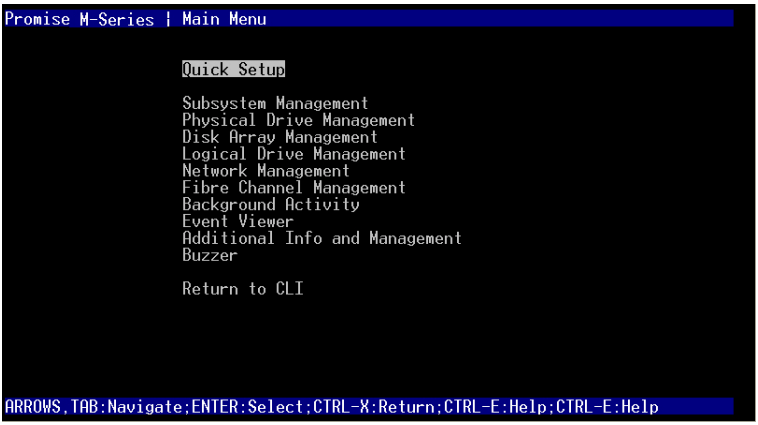
5. Repeat steps 3 and 4 to set the other iSCSI port. Use **-p 2** in place of **-p 1**.

This completes the Management and iSCSI port setup. Go to “Step 8: Install iSCSI Initiator on the Host PC” on page 24.

To see the full set of CLI commands, at the admin@cli> prompt, type **help** and press Enter.

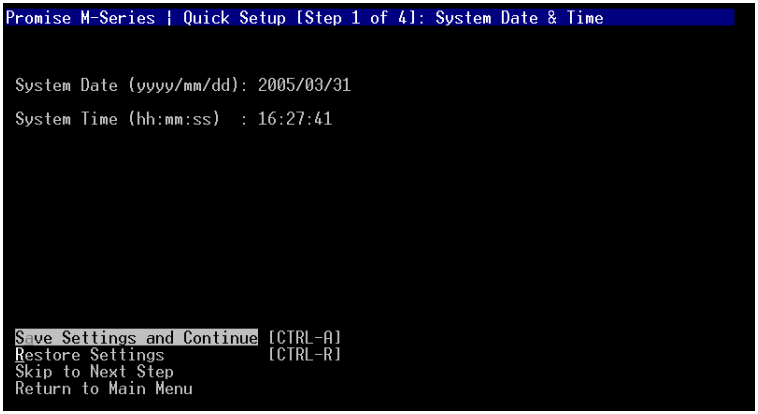
## CLU: Fibre Channel and SCSI Models (M500f/p, M300f/p, M200f/p)

1. At the admin@cli prompt, type **menu** and press Enter.
   The CLU main menu appears.




2. With Quick Setup highlighted, press Enter.
   The first Quick Setup screen enables you to make Date and Time settings.

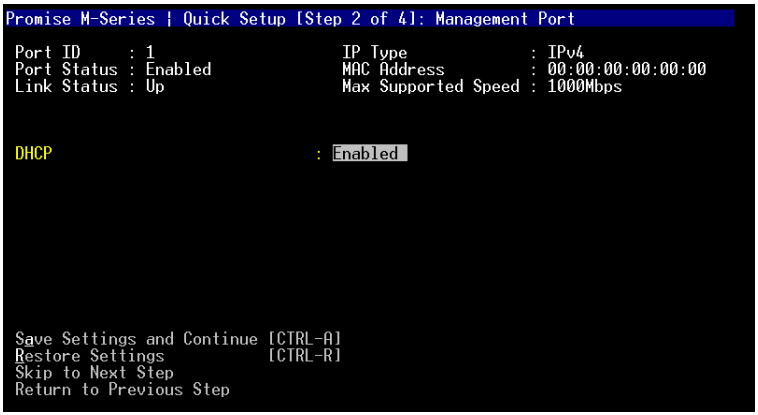
### System Date and Time


Promise M-Series | Quick Setup [Step 1 of 4]: System Date & Time
System Date (yyyy/mm/dd): 2005/03/31
System Time (hh:mm:ss) : 16:27:41
Save Settings and Continue [CTRL-A]
Restore Settings [CTRL-R]
Skip to Next Step
Return to Main Menu

1. Press the arrow keys to highlight System Date.
2. Press the backspace key to erase the current date.
3. Type the new date.
4. Follow the same procedure to set the System Time.

5. Press Ctrl-A to save these settings and move to the Management Port configuration screen.

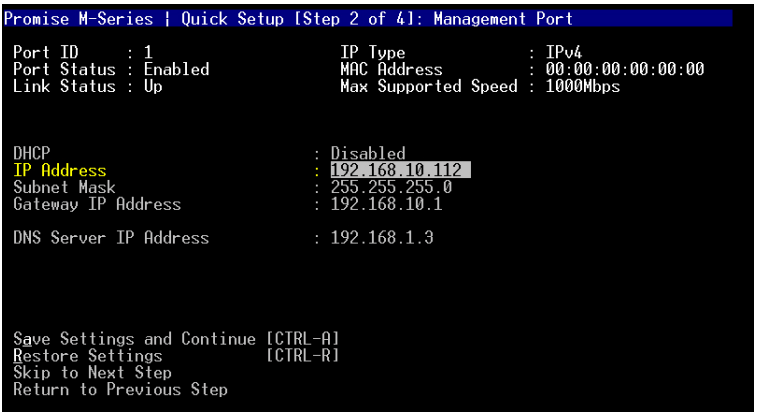
### Management Port


Promise M-Series ¦ Quick Setup [Step 2 of 4]: Management Port
Port ID : 1
Port Status : Enabled
Link Status : Up
IP Type : IPv4
MAC Address : 00:00:00:00:00:00
Max Supported Speed : 1000Mbps
DHCP : Enabled
Save Settings and Continue [CTRL-A]
Restore Settings [CTRL-R]
Skip to Next Step
Return to Previous Step

By default, DHCP is enabled on VTrak (above). To set Management Port settings manually, or to view the current settings, you must disable DHCP.

To view the current Management Port settings:

1. Press the arrow keys to highlight DHCP.
2. Press the spacebar to toggle to Disabled.


Promise M-Series ¦ Quick Setup [Step 2 of 4]: Management Port
Port ID : 1
Port Status : Enabled
Link Status : Up
IP Type : IPv4
MAC Address : 00:00:00:00:00:00
Max Supported Speed : 1000Mbps
DHCP : Disabled
IP Address : 192.168.10.112
Subnet Mask : 255.255.255.0
Gateway IP Address : 192.168.10.1
DNS Server IP Address : 192.168.1.3
Save Settings and Continue [CTRL-A]
Restore Settings [CTRL-R]
Skip to Next Step
Return to Previous Step

The current Management Port IP are displayed (above).

3. Record the information on this screen.
4. Press the spacebar to toggle DHCP back to Enable.

5. Press Ctrl-A to save these settings and move to the RAID configuration screen.

To make Management Port settings manually:

1. Press the arrow keys to highlight DHCP.
2. Press the spacebar to toggle to Disabled.
3. Press the arrow keys to highlight IP Address.
4. Press the backspace key to erase the current IP Address.
5. Type the new IP Address.
6. Follow the same procedure to specify the Subnet Mask, Gateway IP Address and DNS Server IP Address.

   If you do not have a DNS server, skip the DNS Server IP address.
7. Press Ctrl-A to save these settings.

### Exit the CLU

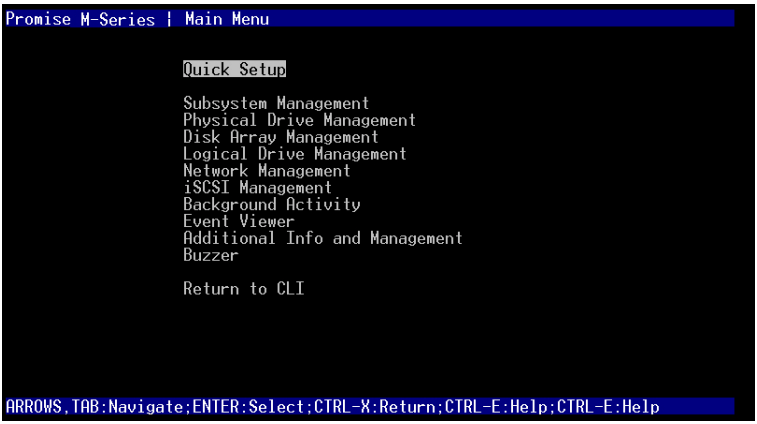
1. Highlight Skip the Step and Finish and press Enter.
2. Highlight Return to CLI and press Enter.

This completes the Management port setup. Go to “Step 9: VTrak Setup with Embedded WebPAM” on page 25.

## CLU: iSCSI Models (M500i, M300i, M200i)

1. At the admin@cli prompt, type **menu** and press Enter.

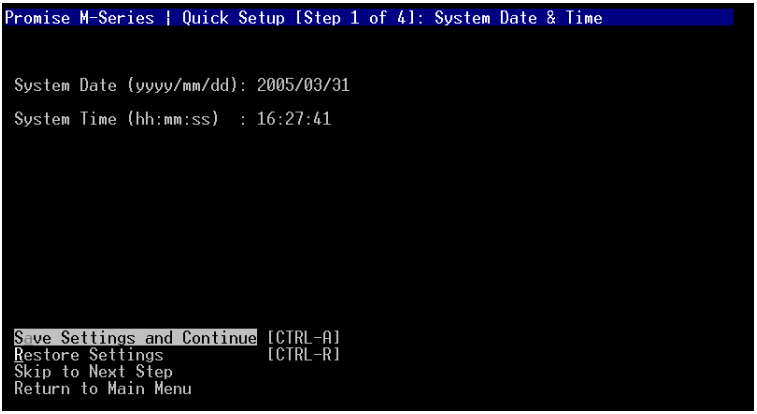
   The CLU main menu appears.




2. With Quick Setup highlighted, press Enter.

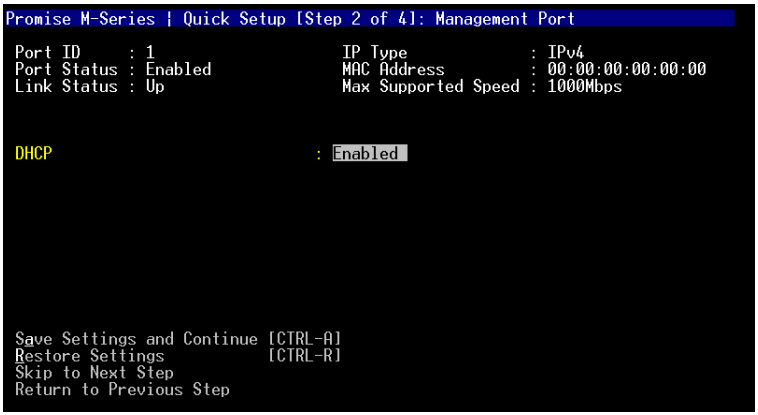
   The first Quick Setup screen enables you to make Date and Time settings.

### System Date and Time


Promise M-Series | Quick Setup [Step 1 of 4]: System Date & Time
System Date (yyyy/mm/dd): 2005/03/31
System Time (hh:mm:ss) : 16:27:41
Save Settings and Continue [CTRL-A]
Restore Settings [CTRL-R]
Skip to Next Step
Return to Main Menu

1. Press the arrow keys to highlight System Date.
2. Press the backspace key to erase the current date.
3. Type the new date.
4. Follow the same procedure to set the System Time.
5. Press Ctrl-A to save these settings and move to the Management Port configuration screen.

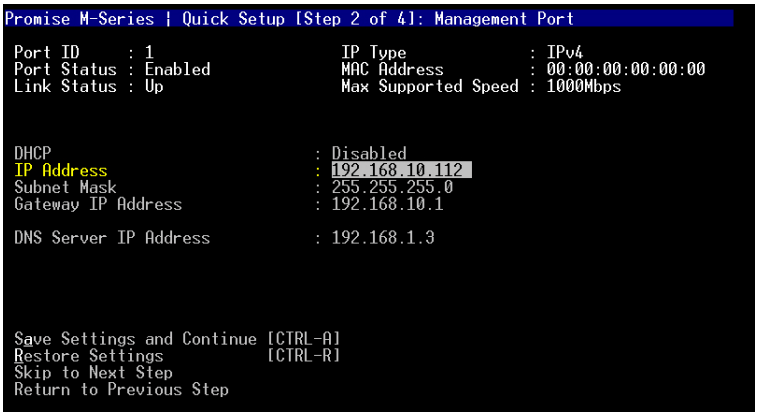
### Management Port


Promise M-Series | Quick Setup [Step 2 of 4]: Management Port
Port ID : 1
Port Status : Enabled
Link Status : Up
IP Type : IPv4
MAC Address : 00:00:00:00:00:00
Max Supported Speed : 1000Mbps
DHCP : Enabled
Save Settings and Continue [CTRL-A]
Restore Settings [CTRL-R]
Skip to Next Step
Return to Previous Step

By default, DHCP is enabled on VTrak (above). To set Management Port settings manually, or to view the current settings, you must disable DHCP.

To view the current Management Port settings:

1. Press the arrow keys to highlight DHCP.
2. Press the spacebar to toggle to Disabled.


Promise M-Series | Quick Setup [Step 2 of 4]: Management Port
Port ID : 1
Port Status : Enabled
Link Status : Up
IP Type : IPv4
MAC Address : 00:00:00:00:00:00
Max Supported Speed : 1000Mbps
DHCP : Disabled
IP Address : 192.168.10.112
Subnet Mask : 255.255.255.0
Gateway IP Address : 192.168.10.1
DNS Server IP Address : 192.168.1.3
Save Settings and Continue [CTRL-A]
Restore Settings [CTRL-R]
Skip to Next Step
Return to Previous Step

The current Management Port settings are displayed (above).

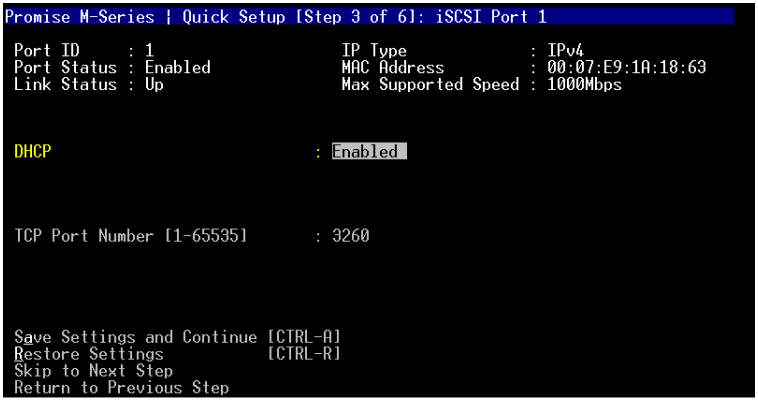
3. Record the information on this screen.
4. Press the spacebar to toggle DHCP back to Enable.
5. Press Ctrl-A to save these settings and move to the iSCSI Port 1screen.

To make Management Port settings manually:

1. Press the arrow keys to highlight DHCP.
2. Press the spacebar to toggle to Disabled.
3. Press the arrow keys to highlight IP Address.
4. Press the backspace key to erase the current IP Address.
5. Type the new IP Address.
6. Follow the same procedure to specify the Subnet Mask, Gateway IP Address and DNS Server IP Address.

   If you do not have a DNS server, skip the DNS Server IP address.
7. Press Ctrl-A to save these settings and move to the iSCSI Port 1 screen.

### iSCSI Ports

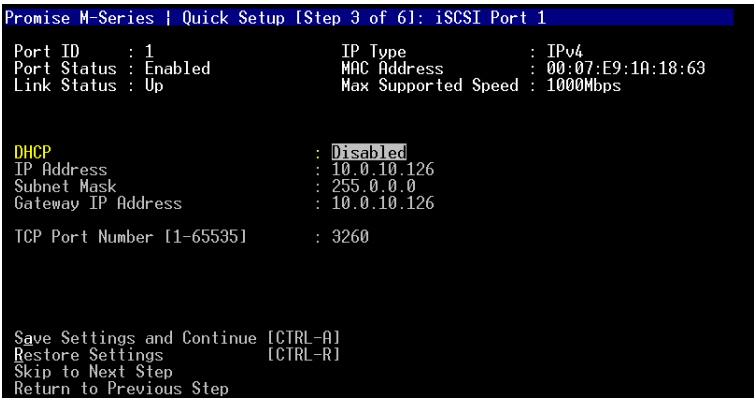

Promise M-Series | Quick Setup [Step 3 of 6]: iSCSI Port 1
Port ID : 1
Port Status : Enabled
Link Status : Up
IP Type : IPv4
MAC Address : 00:07:E9:1A:18:63
Max Supported Speed : 1000Mbps
DHCP : Enabled
TCP Port Number [1-65535] : 3260
Save Settings and Continue [CTRL-A]
Restore Settings [CTRL-R]
Skip to Next Step
Return to Previous Step

By default, DHCP is enabled on VTrak (above). To set iSCSI Port settings manually, or to view the current settings, you must disable DHCP.

To view the current iSCSI Port settings:

1. Press the arrow keys to highlight DHCP.
2. Press the spacebar to toggle to Disabled.
3. Record the information on this screen.

   See the illustration on the next page.
4. Press the spacebar to toggle DHCP back to Enable.
5. Press Ctrl-A to save these settings and move to the iSCSI Port 2 screen.
6. Follow the same procedure to view settings for iSCSI Port 2.
7. Press Ctrl-A to save these settings and move to the RAID configuration screen.


Promise M-Series | Quick Setup [Step 3 of 6]: iSCSI Port 1
Port ID : 1
Port Status : Enabled
Link Status : Up
IP Type : IPv4
MAC Address : 00:07:E9:1A:18:63
Max Supported Speed : 1000Mbps
DHCP : Disabled
IP Address : 10.0.10.126
Subnet Mask : 255.0.0.0
Gateway IP Address : 10.0.10.126
TCP Port Number [1-65535] : 3260
Save Settings and Continue [CTRL-A]
Restore Settings [CTRL-R]
Skip to Next Step
Return to Previous Step

The current iSCSI Port settings are displayed (above).

To make iSCSI Port settings manually:

1. Press the arrow keys to highlight DHCP.
2. Press the spacebar to toggle to Disabled.
3. Press the arrow keys to highlight IP Address.
4. Press the backspace key to erase the current IP Address.
5. Type the new IP Address.
6. Repeat the previous steps to specify the Subnet Mask, Gateway IP Address and DNS Server IP Address.

   If you do not have a DNS server, skip the DNS Server IP address.
7. Press Ctrl-A to save these settings and move to the iSCSI Port 2 screen.
8. Follow the same procedure to make settings for iSCSI Port 2.
9. Press Ctrl-A to save these settings.

### Exit the CLU

1. Highlight Skip the Step and Finish and press Enter.
2. Highlight Return to CLI and press Enter.

This completes the Management and iSCSI port setup. Go to “Step 8: Install iSCSI Initiator on the Host PC” on page 24.

# *Step 8: Install iSCSI Initiator on the Host PC*

This step applies to the M500i, M300i and M200i models only.

To access the iSCSI data ports, you must have the iSCSI Initiator installed on your Host PC. You can use a Gigabit Ethernet network interface card (GbE NIC) with hardware-based iSCSI initiator from such vendors as:

- QLogic
- Intel
- Alacritech

Contact the card manufacturer for the latest model information. Follow the installation and setup instructions that come with the card.

## Software-based iSCSI Initiator

You can also use a software-based iSCSI initiator in combination with a GbE NIC. If you choose a Microsoft software iSCSI initiator, point your browser to **www.microsoft.com**, click on the **Downloads** link and search for **iSCSI Initiator**. The instructions below apply to iSCSI Initiator version 2.0.

Install the iSCSI initiator on your Host PC then proceed with the following steps.

1. Go to Start > Settings > Control Panel and double-click on iSCSI Initiator.

   Or double-click the iSCSI Initiator icon on the desktop.

   The iSCSI Initiator Properties dialog box displays.
2. On the Discovery tab, click on **Add** button.
3. In the Add Target Portal dialog box, type in the IP address of one of the VTrak's iSCSI ports and click **OK**.
4. Go to Targets tab. The iSCSI name should appear. It looks like:

   iqn.1994-12.com.promise.target.0.0.4.0.0.0.0.0.
5. Highlight the ISCSI name and click the **Logon** button. Then click **OK** on the Log On to Target dialog box.

To log off from VTrak, do the following:

1. Launch the iSCSI Initiator as described above.
2. Go to the Targets tab, highlight the VTrak iSCSI name and click the **Details** button.
3. Go to the Sessions tab of the Target Properties dialog box. The Identifier for the iSCSI name should appear. It looks like:

   ffffffff817b0494-4000013700000007
4. Check the box to the left of the Identifier, click the **Log off...** button, then click the **OK** button.

After the iSCSI Initiator is installed, follow the installation and setup instructions that come with your GbE NIC card.

**Note**

Setup of an actual iSCSI initiator takes place after the disk array and logical drive are configured on the VTrak. If you plan to use LUN Masking, enable this feature and specify your LUNs before setting up your iSCSI initiator.
See Chapters 4 or 5 of the *VTrak Product Manual* on the CD for more information.

# *Step 9: VTrak Setup with Embedded WebPAM*

**Note**

You can also use the CLU to create disk arrays and logical drives. See Chapter 5 of the *VTrak Product Manual* on the CD for more information.

Set up with WebPAM consists of the following:

- Log-in to WebPAM (below)
- Language Selection (page 28)
- Create a Disk Array (page 28)
- Additional Logical Drives (page 37)
- Log-out of WebPAM (page 37)
- Internet Connection using WebPAM (page 38)

## Log-in to WebPAM

1. Launch your Browser.
2. In the Browser address field, type in the IP address of the VTrak Management port.

   Use the IP address you obtained in Step 7. Note that the IP address shown below is only an example. The IP address you type into your browser will be different.

### Regular Connection

- WebPAM uses an HTTP connection . . . . . .http://
- Enter the VTrak's Management Port IP address . . . . 192.168.10.87

Together, your entry looks like this:

**http://192.168.10.87**

## Secure Connection

- WebPAM uses a secure HTTP connection . . . . . .https://
- Enter the VTrak's Management Port IP address . . . . 192.168.10.87

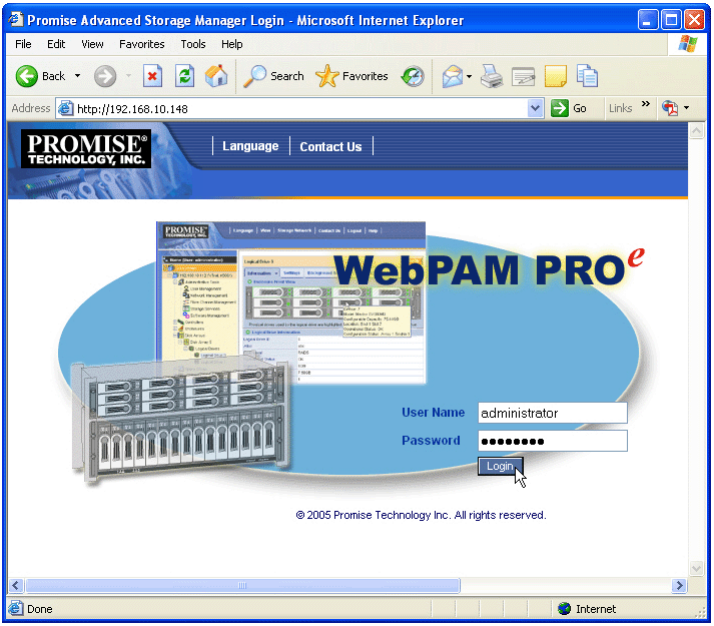
Together, your entry looks like this:

**https://192.168.10.87**

**Note**

Whether you select a regular or a secure connection, your login to WebPAM and your user password are always secure.

.




3. When the opening screen appears, type **administrator** in the User Name field and type **password** in the Password field.

   The User Name and Password are case sensitive.

4. Click the **Login** button.

After sign-in, the WebPAM opening screen appears (next page). If there are any unconfigured physical drives in the enclosure, the Array Configuration menu will also appear (see page 28).

**Important**

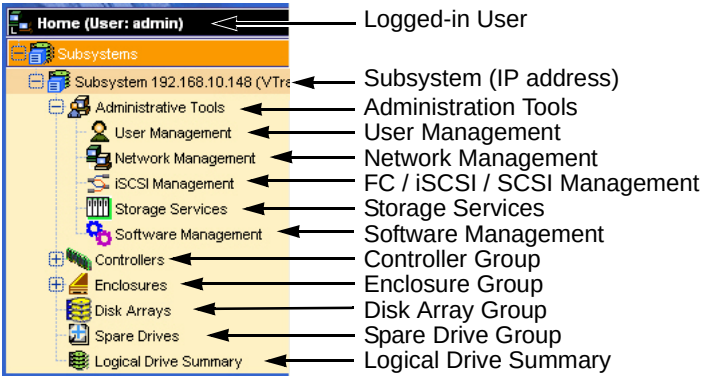
As soon as possible, assign the Administrator's password. Make the change under User Management. Each user you create will have his/her own login ID and password.

**Note**

Make a Bookmark (Netscape Navigator) or set a Favorite (Internet Explorer) of the Login Screen so you can access it easily next time.

Promise Advanced Storage Manager - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.10.148/screen.php
Go Links
PROMISE TECHNOLOGY, INC.
Language View Storage Network Contact Us Logout Help
Home (User: administrator)
Subsystems
192.168.10.148 (VTrak)
Administrative Tools
Controllers
Enclosures
Disk Arrays
Spare Drives
Logical Drive Summary
Welcome to Promise Advanced Storage Manager
Promise Web Based Advanced Storage Manager is an easy-to-use software designed to simplify iSCSI storage management. Specifically designed for Promise VTrak subsystems, WebPAM can configure, manage or monitor Promise VTrak products remotely from a web browser from anywhere in the world.
Quick Link
Settings for all logical drives in the subsystem
Settings for all physical drives in the enclosure
Disk arrays information, creation and deletion
Network settings for management port and iSCSI ports
iSCSI management
Event Viewing
Background activities management
© 2004 Promise Technology Inc. All rights reserved.
Version: 0.03.0000.41, Build Date: Mar 25, 2005
Internet

The first time you log in to WebPAM, there will be no Users except for “administrator”. There will be no disk arrays or logical drives.




Use the Tree to navigate to the various functions of WebPAM. Click on an item in the Tree to display it in the window.

## Language Selection

WebPAM displays in English, German, French, Italian, Japanese, Chinese Traditional, Chinese Simple and Korean.

1. Click on **Language** in the WebPAM Header.

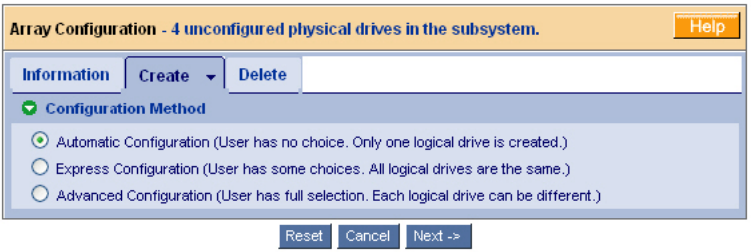
   The language list appears in the Header.

2. Click on the language you prefer.

   The WebPAM user interface will display in the selected language.

## Create a Disk Array

Click on the Disk Arrays icon. The Array Configuration menu appears. Since this VTrak is newly activated, there are no disk arrays or logical drives yet.

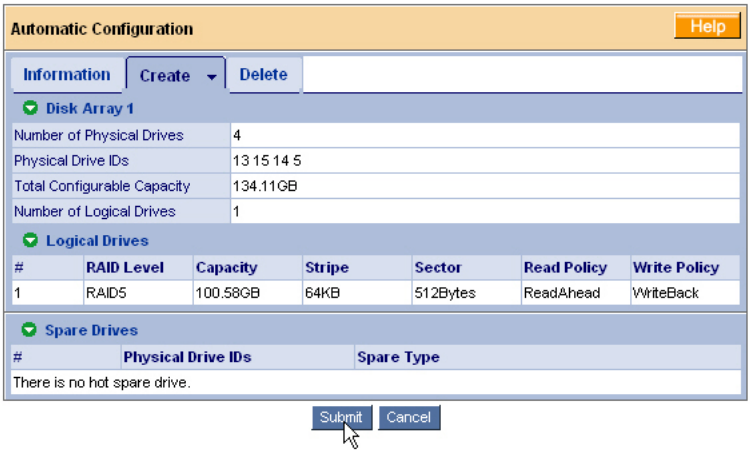

Array Configuration - 4 unconfigured physical drives in the subsystem.
Help
Information
Create
Delete
Configuration Method
Automatic Configuration (User has no choice. Only one logical drive is created.)
Express Configuration (User has some choices. All logical drives are the same.)
Advanced Configuration (User has full selection. Each logical drive can be different.)
Reset
Cancel
Next ->

There are three options: *Automatic*, *Express* and *Advanced*. Select one and click the **Next** button. Or select one from the dropdown menu on the Create tab.

### Automatic

The Disk Array Automatic Creation option enables you to create a new disk array following a default set of parameters. One logical drive will be made automatically when you create the disk array.

The number of unconfigured physical drives available will determine the RAID level of the disk array and whether a spare drive is created.




When you choose the Automatic option, the following parameters display:

- Disk Arrays – The number of physical drives in the disk array, their ID numbers, configurable capacity and the number of logical drives to be created
- Logical Drives – The ID number of the logical drive(s), their RAID level, capacity and stripe size
- Spare Drives – The physical drive ID number of the dedicated hot spare assigned to this disk array

If you accept these parameters, click the **Submit** button. The new disk array appears in the Disk Array List on the Information tab.

If you do NOT accept these parameters, use the Express (below) or Advanced (page 31) option to create your disk array.

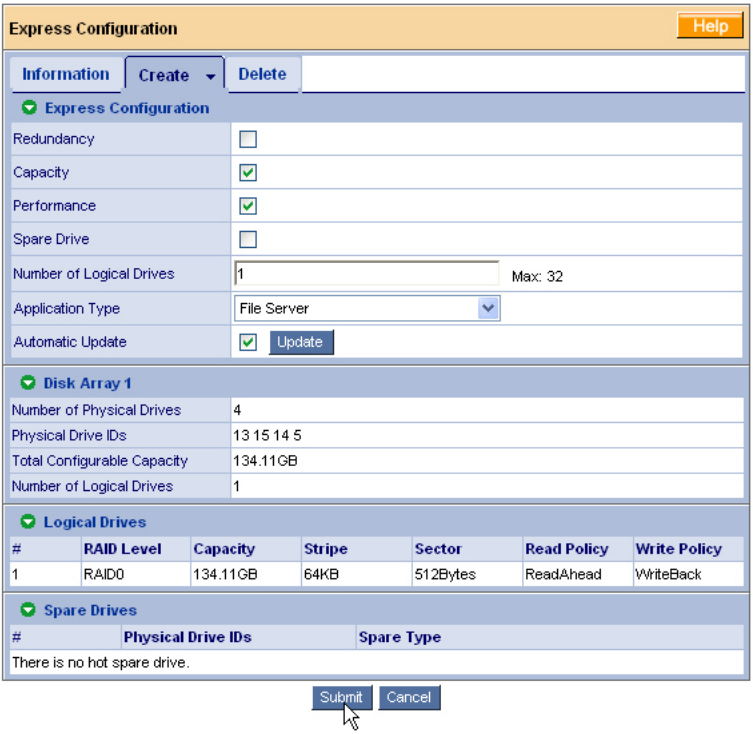
### Express

The Disk Array Express Creation option enables you to choose the parameters for a new disk array by specifying the characteristics you want. With this method,

you can create multiple logical drives at the same time you create your disk array. However, all of the logical drives will be the same size and RAID level.

If you prefer to specific the parameters directly, use the Advanced option to create your disk array.

If you are uncertain about choosing parameters for your disk array, use the Automatic option.




Follow these steps to create a new disk array.

1. Check the boxes to select any one or a combination of:
   - Redundancy – The array will remain available if a physical drive fails
   - Capacity – The greatest possible amount of data capacity
   - Performance – The highest possible read/write speed
   - Spare Drive – A hot spare drive
2. In the Number of Logical Drives field, enter the number of logical drives you want to make from this disk array.

The maximum possible number of logical drives appears to the right of this field.

3. From the Application Type menu, select an application that best describes your intended use for this disk array:
   - File Server
   - Video Stream
   - Transaction Data
   - Transaction Log
   - Other
4. Click the **Update** button.

   Or check the Automatic Update box and updates will occur automatically.

   The following parameters display:
   - Disk Arrays – The number of physical drives in the disk array, their ID numbers, configurable capacity and the number of logical drives to be created
   - Logical Drives – The ID number of the logical drive(s), their RAID level, capacity and stripe size
   - Spare Drives – The physical drive ID number of the dedicated hot spare assigned to this disk array

   If you accept these parameters, proceed to the next step.

   If you do NOT accept these parameters, review and modify your selections in the previous steps.
5. When you are done, click the **Submit** button.

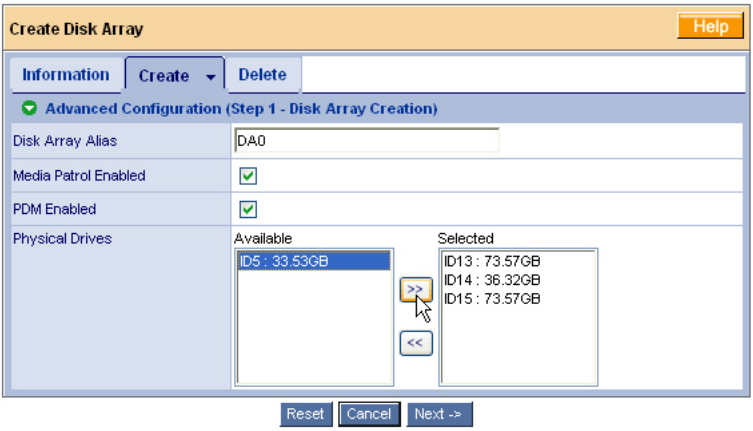
   The new disk array appears in the Disk Array List on the Information tab.

### Advanced

The Disk Array Advanced Creation option enables you to directly specify all parameters for a new disk array. If you select less than the total available capacity for the first logical drive, you can use the remaining space to create additional logical drives.

An explanation of the choices you will make while using the Advanced option to create your disk array is included in Chapter 7 of the *VTrak Product Manual* on the CD.

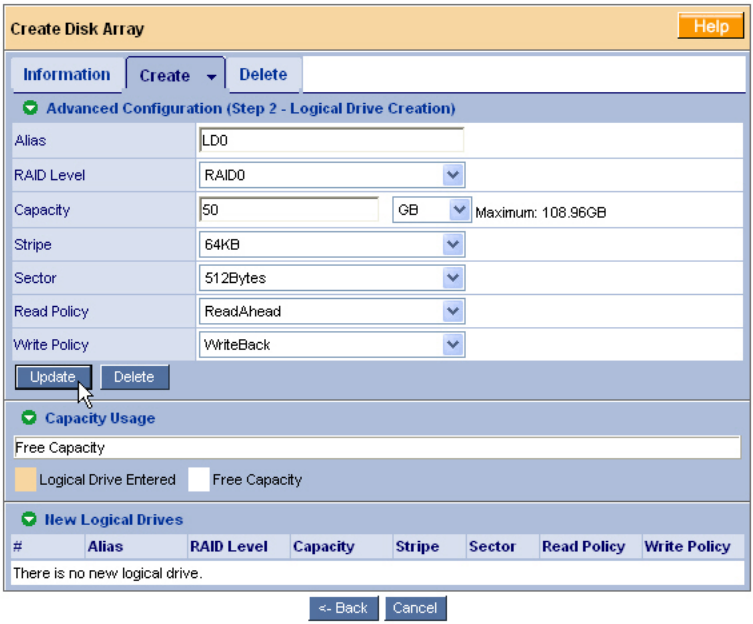
If you are uncertain about choosing parameters for your disk array, use the Express or Automatic option to create your disk array.




To create a new disk array:

1. Enter a name for the disk array in the field provided.
2. Check the box to enable the following features.
   - Media Patrol – A routine maintenance procedure that checks the magnetic media on each disk drive. Media Patrol is concerned with the condition of the media itself, not the data recorded on the media.
   - PDM – Predictive Data Migration (PDM) scans the bad sector remapping table of the disk drives assigned to a logical drive. When the table fills to a specified percentage of its capacity, PDM triggers a migration of data from the suspect drive (the disk drive with the bad sectors) to a spare disk drive.
3. Highlight physical drives you want in the disk array from the Available list and press the **>>** button to move them to the Selected list.

   You can also double-click them to move them.
4. When you are done, click the **Next** button.




On this screen you will specify your logical drives. Specify one logical drive at a time until the full capacity of the disk array is allocated.

5. Enter an Alias (name) for the first logical drive.
6. Choose a RAID level from the dropdown menu.

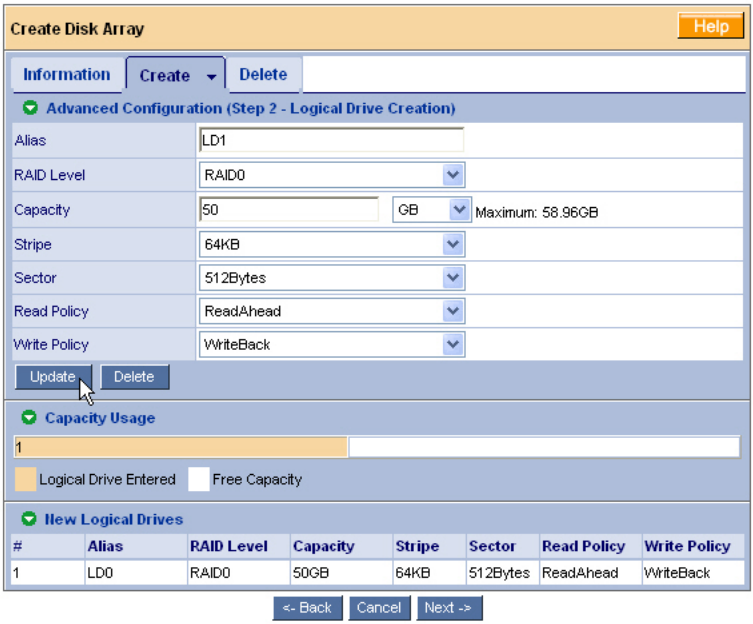
   The choice of RAID levels depends on the number of physical drives you selected.
7. Specify a Capacity and the unit of measure (MB, GB, TB).

   This value will be the data capacity of the logical drive. If you specify less than disk array's maximum capacity, the remainder is available for additional logical drives.
8. Specify a Stripe size from the dropdown menu.

   8, 16, 32, 64, 128, 256, 512 KB and 1 MB are available. 64 KB is the default.
9. Specify a Sector size from the dropdown menu.

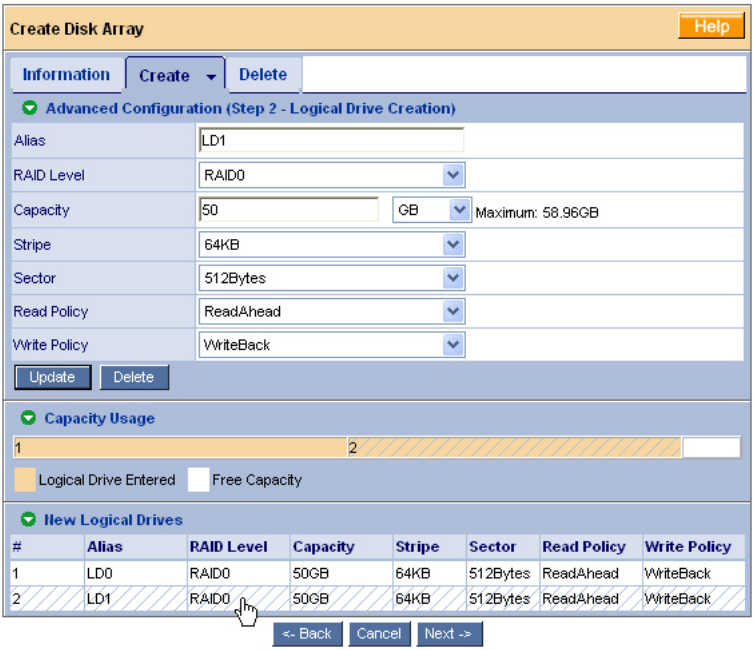
   512 Bytes, 1, 2 and 4 KB are available. 512 Bytes is the default.

10. Choose a Read Cache policy:
    - ReadCache
    - ReadAhead
    - No Cache
11. Choose a Write Cache policy:
    - WriteThru
    - WriteBack
12. Click the **Update** button.

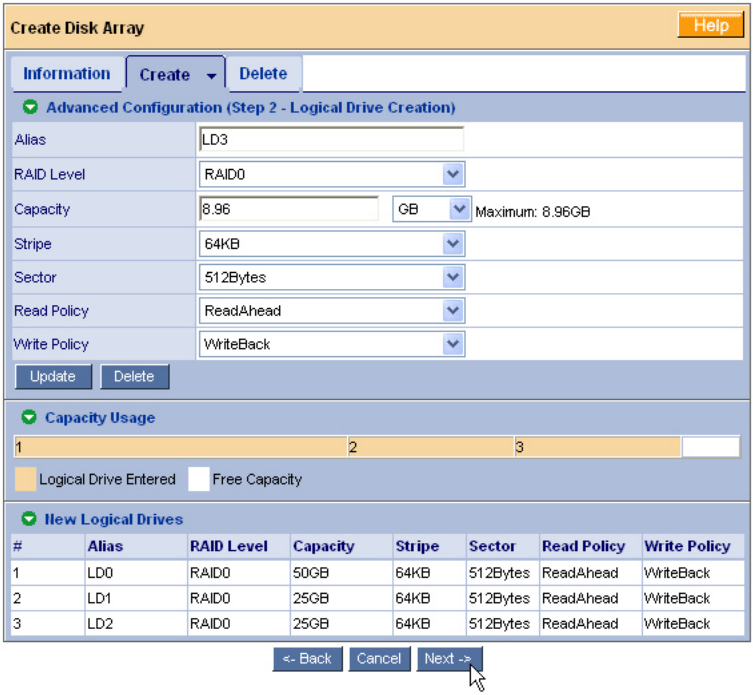



When you click the Update button, WebPAM sets up one logical drive and adds it to the New Logical Drive lists at the bottom of the window.

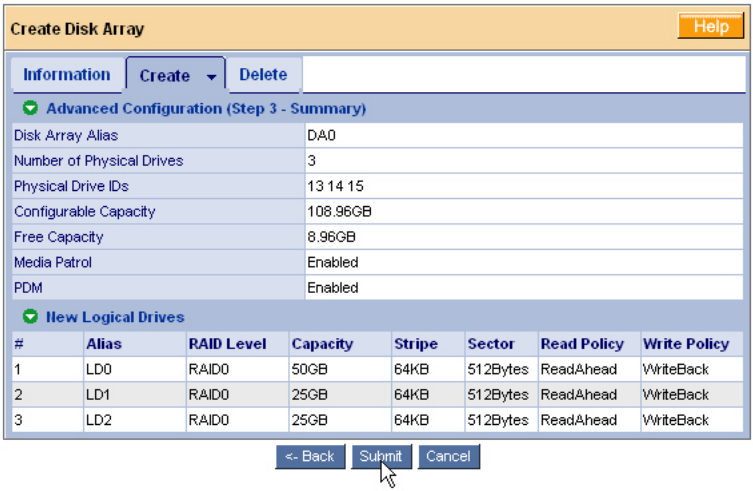
To create another logical drive, repeat steps 5 through 12, above.




If you want to change a logical drive setting, click on the logical drive at the bottom of the window. The entry and the capacity usage are highlighted. Make your changes to the parameters and click the **Update** button.




13. When you have finished specifying logical drives, click the **Next** button.




The proposed disk array appears with the logical drive(s) you specified.

14. If you agree with the proposed disk array and logical drive(s), click the **Submit** button.

    If you disagree, click the **Back** button and make changes as needed.

## Additional Logical Drives

If you want to create additional logical drives and there is unused space on the current disk array, click on the Disk Array icon and click on the Create LD tab. You will go to Disk Array Advanced Creation (see page 31).

If the current disk array is fully allocated, use additional physical drives to create a new disk array. Click on the Disk Arrays icon, then select Automatic, Express or Advanced from the Create tab dropdown menu (see page 28).

## Log-out of WebPAM

There are two ways to log out of WebPAM:

- Close your browser window
- Click Logout on the WebPAM banner (below)

Clicking **Logout** brings you back to the Login Screen. After logging out, you must enter your user name and password in order to log in again.

## Internet Connection using WebPAM

The above instructions cover connections between VTrak and your company network. It is also possible to connect to a VTrak from the Internet.

Your MIS Administrator can tell you how to access your network from outside the firewall. Once you are logged onto the network, you can access the VTrak using its IP address.

While only a Fibre Channel, iSCSI or SCSI-capable PC can read and write data to the logical drives on the VTrak, other PCs can monitor the VTrak from virtually any location.

# *Frequently Asked Questions*

**What kind of disk drives can I use with VTrak?**

VTrak supports 1.5 and 3.0 Gb/s Serial ATA disk drives.

**Can I take the disk drives from my UltraTrak, put them into the VTrak and keep my disk array or logical drive intact?**

Yes. UltraTrak and early VTrak subsystems used a proprietary method of disk metadata, stored in the reserve sector of each physical drive. VTrak M-Class uses the industry-standard DDF and has a metadata-to-DDF conversion feature. To use the conversion feature, you must restart the VTrak M-Class after installing disk drives from an older system.

Note that if you move the disk drives from the VTrak M-Class to the older subsystems, they will not recognize your disk array or logical drive.

**Can I use my existing SCSI card with VTrak M-Class?**

Yes, if your VTrak is a M500p, M300p or M200p model. However, for best performance results, use an Ultra320 SCSI card.

**How can I tell when the VTrak has fully booted?**

When the VTrak is fully booted up, the Power and FRU LEDs will light up green. If a disk array is present, the Logical Drive LED will light up green also. The Controller LED blinks five times, once per second; goes dark for ten seconds; then blinks five times again.

**Why does VTrak come with a Command Line Utility?**

First, to assign your VTrak an IP address in order for the WebPAM management software to connect to it. Second, in the event of a network failure, you can still access the VTrak. Third, some users prefer the Command Line Utility.

**My WebPAM connection was working OK. But later on, it timed out. What do I do now?**

The network condition can time-out for several reasons. When an open connection has no action for a specific amount of time (the Administrator can change it), the connection times-out automatically for security reasons. When you attempt to use WebPAM, it returns to the login screen. Enter your user name and password and click Login, and WebPAM will establish a new connection.

**I can access the VTrak over my company's intranet. But I can't access it from an outside Internet connection. How do I make the Internet connection work?**

This condition is not related to VTrak, but is due to your firewall and network connection protocol. Contact your MIS Administrator.

**With other Promise VTraks, I used the Server's IP address in WebPAM to connect with the RAID subsystem. Why is this VTrak M-Class different?**

VTrak M-Class has the server software embedded. With the M-Class, you point your browser directly to the VTrak rather than a server. Also, with M-Class you do not have to create a subsystem because the subsystem already exists.

**Why can a RAID 1 logical drive on VTrak consist of only two disk drives?**

On VTrak, RAID 1 logical drives work in mirrored physical drive pairs. You could create up to seven RAID 1 logical drives. Or you can create a single RAID 10 logical drive with data mirroring and up to 14 physical drives. If you have an odd number of drives but still want data mirroring, use RAID 1E.

See the *VTrak Product Manual* on the CD for more information on the number of physical drives you can use for each RAID level.

**Are logical drives on VTrak limited to 2.199 terabytes?**

No. But verify that your operating system *supports* logical drives over 2.199 TB. Also, for the operating system to *recognize* the full capacity of logical drives over 2.199 TB, you must specify a sector size of 1 KB or larger when you create the logical drive. See Chapter 7 of the *VTrak Product Manual* on the CD for more information.

**I have two UltraTraks and use WebPAM to monitor them. Can I use my existing WebPAM setup to monitor the VTraks also?**

No. Use the WebPAM embedded with the VTrak M-Class.

**How can I be sure everything is working OK on the VTrak?**

Locally: The VTrak enclosure has LEDs on the front to monitor the status of power, field replaceable units (FRUs) and logical drives. When these are green, VTrak is functioning normally.

Remotely: Check the Tree Icons in WebPAM. If there are no yellow or red warning icons displayed, VTrak is functioning normally.

**What happens if a logical drive goes critical?**

On the front of VTrak, the logical drive LED turns amber and an audible alarm sounds. This condition is described in Chapter 4 of the *VTrak Product Manual* on the CD.

**Can VTrak run using just one power supply?**

Yes, it is possible to run VTrak on a single power supply. There are two power supplies so that VTrak will continue running if one of the power supply fails. But deliberately leaving one power supply off negates this advantage.

In addition, leaving one power supply off reduces air flow through the VTrak enclosure and can contribute to overheating. Always switch on both power supplies.

# *Contact Technical Support*

Promise Technical Support provides several support options for Promise users to access information and updates. We encourage you to use one of our electronic services, which provide product information updates for the most efficient service and support.

If you decide to contact us, please have the following information available:

- Product model and serial number
- BIOS, firmware and driver version numbers
- A description of the problem / situation
- System configuration information, including: motherboard and CPU type, hard drive model(s), SATA/ATA/ATAPI drives & devices, and other controllers.

## Technical Support Services

| | |
|---|---|
| Promise Online™ Web Site | http://www.promise.com<br>(technical documents, drivers, utilities, etc.) |

### United States

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|---|---|
| E-mail Support | support@promise.com |
| Fax Support | (408) 228-1097 Attn: Technical Support |
| Phone Support | (408) 228-1400 option 4 |
| If you wish to write us for support: | Promise Technology, Inc.<br>580 Cottonwood Drive<br>Milpitas, CA 95035, USA |

### Europe, Africa, Middle East

| | |
|---|---|
| E-mail Support | support@promise-emea.com |
| Fax Support | +31 (0) 40 256 9463 Attn: Technical Support |
| Phone Support | +31 (0) 40 235 2600 |
| If you wish to write us for support: | Promise Technology Europe B.V.<br>Science Park Eindhoven 5542<br>5692 EL Son, The Netherlands |

### Germany

| | |
|---|---|
| E-mail Support | support-de@promise-emea.com |
| Fax Technical Support | +49 (0) 2 31 56 76 48 - 29<br>Attn: Technical Support |
| Phone Technical Support | +49 (0) 2 31 56 76 48 - 10 |
| If you wish to write us for support: | Promise Technology Germany<br>Europaplatz 9<br>44269 Dortmund, Germany |

### Italy

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| E-mail Support | support-it@promise-emea.com |
| Fax Support | 0039 06 367 12400 Attn: Technical Support |
| Phone Support | 0039 06 367 12626 |
| If you wish to write us for support: | Promise Technology Italy<br>Piazza del Popolo 18<br>00187 Roma, Italia |

### Taiwan

| | |
|---|---|
| E-mail Support | support@promise.com.tw |
| Fax Support | +886 3 578 2390 Attn: Technical Support |
| Phone Support | +886 3 578 2395 (ext. 8811) |
| If you wish to write us for support: | Promise Technology, Inc.<br>2F, No. 30, Industry E. Rd. IX<br>Science-based Industrial Park<br>Hsinchu, Taiwan, R.O.C. |

### China

| | |
|---|---|
| E-mail Support | support-china@promise.com |
| Fax Support | +86-10-8857-8015 Attn: Technical Support |
| Phone Support | +86-10-8857-8085/8095 |
| If you wish to write us for support: | Promise Technology China<br>Room 1205, Tower 3<br>Webok Time Center, No.17<br>South Zhong Guan Cun Street<br>Hai Dian District, Beijing 100081, China |

**Caution**

- There is a risk of explosion if the battery is replaced by the incorrect type.
- Dispose of used batteries according to the instructions that accompany the battery.